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ABSTRACT

This six-part pamphlet examines 87 Finnish principals' personalities in terms of leadership and cognitive styles. The study's purpose is noted in section 1. Section 2 analyzes pedagogical roles and behaviors from a normative dimension perspective. Section 3 shifts to the personal dimension in discussing styles, values, and vocational preferences. Section 4 deals with the study's four problem areas, and section 5 summarizes results in terms of principals' subject areas, cognitive styles, teaching method preferences, leadership concepts, and attitudes toward criticism. A final section discusses those results. A four-page bibliography is appended. (KS)

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TAMPEREEN YLIOPISTON KASVATUSTIETEEN LAITOS

JARKKO LEINO

SOME CHARACTERISTICS OF SCHOOL PRINCIPALS: A PILOT INVESTIGATION INTO COGNITIVE STYLES AND LEADERSHIP CONCEPTION OF FINNISH SCHOOL PRINCIPALS

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PREFACE

The present study means a dive into the world of school management. The field is quite unexplored in Finland though the key position of the principal in all educational innovations is generally acknowledged. The study originates in the inspiring atmosphere of the Institute where I work.

I wish to express my gratitude to Professor Väinö Heikkinen and Associate Professor Reijo Raivola who have read the manuscript and given valuable comments. I am also very grateful to Professor Anna-Liisa Leino for the discussions we had and the linguistic help I received.

Tampere, February 1984

Jarkko Leino

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1. PURPOSE OF RESEARCH

The 70s brought about many changes in the Finnish educational system. Nine year compulsory education was implemented throughout the country, plans for reforming the senior secondary stage of education were carried out as well as the decisions concerning the schedule to be followed, and the reform of higher education was started. During these reform processes educational administration was considered of prime importance at all levels. The educational policy was bureaucratic and centralized. The curricula for all types of schools and institutes were comprehensive and detailed. The number of administrators was increased; they were to control and steer the reform processes (see Somerkivi 1982).

The early 80s meant a change in educational policy. The organizational reform was carried out but actual changes in everyday teaching-learning process did not occur to the extent intended. Now it was time to pay attention to the daily life of schools. It was noticed that the curriculum of the comprehensive school, in particular, was far too detailed and school books far too full of subject matter to satisfy the needs of the majority of the students. The schools and the teachers should be provided with more independence and decision-making power in order to implement the curriculum flexibly according to

the demands of the personality development of each student. The curriculum was changed and the rules to divide classes for some pedagogical purpose were widened. Similar phenomena can be seen in other sectors of the Finnish educational system even though not so clearly.

The role of school principals of comprehensive and senior secondary schools has started to change during the past few years. While the duties of the principal in the 70s were mainly organizational, such as making the time table for the students and teachers, maintaining contacts with the school authorities of the municipal board, providing them with statistical information concerning school etc., the role of the principal in the early 80s meant more negotiations with the teachers about how to best use the increased resources of the school. Of course, most of the above-mentioned duties are still part of the principal's work, but emphasis is changing and, hence, the demands placed upon the principal are changing.

The present report deals with the characteristics of the principals of the comprehensive school and senior secondary school. The characteristics of the present investigation are basically cognitive styles which have been noticed to be in close relation with the professional activities. Certain kinds of cognitive styles influence a person's choice of

career or position in the field chosen (e.g. Witkin et al. 1977). It is probable that teachers having a special personality structure have a tendency to choose leadership position and others having another personality structure are disposed to avoid these jobs. The willingness to choose the position of principal is, in particular, dependent on the expectations a person has concerning the principal's work or the information he has of the principal's tasks, because the monetary benefits or working hours are not too inviting in Finland.

Because in the present investigation some semi-projective tests of cognitive styles were used it is possible to get preliminary information about the leadership conceptions of the subjects who all were school principals. The question of leadership will be more central in the future because decision-making power will be decentralized. Duties concerned with all kinds of situations demanding ability to negotiate with people will be increased. For this reason the principal's leadership qualities will be further investigated.

2. PEDAGOGICAL ROLE OF PRINCIPALS

It is well known that the relationship between the expectations attached to a given institutional post and the need-dispositions characteristic of a particular incumbent of the post is of crucial importance to the particular principal as well as to the school staff. In the following few chapters a short outline of the tasks, responsibilities, duties, and rights of the principal is presented. The outline concerns the present situation in the comprehensive school and the upper secondary school in Finland.

Educational systems like many other organizations use the non-administrative personnel as a major source of administrative personnel. Because the principal (headmaster, rector) of the school has also teaching duties in ordinary classrooms he [1] has to be a qualified teacher. According to the Comprehensive School Statute a tenured teacher should be given preference in the election of principal. The teachers of the school have opportunity to suggest which of them should be elected though it is the duty of the municipal school board to make the decision.

The administration of the educational system in Finland is very centralized. Even the School Acts

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1) or she, of course

are rather detailed but especially the hierarchial administration consisting of Ministry of Education, National Board of General Education, regional administrational councils, and municipal school councils and boards provide many opportunities to get actively involved in the everyday affairs of schools.

The post of the principal in Finnish schools is supposed to be a pedagogical one. In practice it is pedagogical only in a rather indirect way because most management matters are already accurately regulated by statutes or provisions of the National Board of Schools and other school administrators. In comprehensive school the principal has to lead, instruct, and supervise teaching and educational activities in school, the use and maintenance of the library, and the routines at the school office; look after cooking and dormitory activities (there are a few boarding-schools); get teachers to collaborate; take care of discipline; and help other teachers and dormitory attendant with questions concerning discipline. One of the main tasks of the principal is to prepare, together with other teachers, the annual adjustment of the curriculum consisting of the program of studies and all the daily routines with possible exceptions (e.g. excursions etc.). The principal has also to listen to other teachers teaching, call the meetings of teachers, act as chairman, and implement the decisions of the

meetings; inform the staff about the official and other messages; get a substitute for a teacher in case of a short absence (up to three days); send annual statistics and reports to school council; see that necessary documents are written and by every possible means act in accordance with what is written in the official documents, and take whatever measures are necessary depending on the circumstances.

Because secretarial or other personnel is limited or in small schools altogether lacking, the principal has often to do himself the paper work at his office. The principal is also a secretary of the School Board, the members of which are appointed by the Town or Municipal Council. The staff of the school and the students have their representatives in the board. The school board has many important and responsible duties set by School Act such as co-operation between school staff and parents, seeing that the property and instructional equipments are attended to and used well, looking after school work, and making propositions whenever needed.

As the list above shows the principal is the leader of the school and also one of the teachers, but his direct decision-making power is very limited. He makes plans and suggestions according to the school law, statutes, and what administrative authorities say, but the decisions are made by the School Board

and Municipal Council. Hence the role of leadership the principal has is different from that in many other organizations. It may be worth mentioning that the Regional Administrative Council has only planning and advisory duties without any decision-making power.

The principals are just now on the point of getting a new pedagogical role. Each school will be given more teaching hours than is needed for teaching pupils in their ordinary groups so that the school can divide the groups into smaller ones when necessary on the basis of pedagogical viewpoints. The teachers' meeting will give proposals as to the way extra teaching hours will be distributed and in this meeting the principal has a very important role as a negotiator and persuader. The social role will thus become more prominent.

The principals of senior secondary schools have similar duties; but in addition to that they have to make five different programs of study (timetables, schedules) for each school year on account of the new periodic system.

2.1 Theories of Leadership

The way in which a school principal behaves depends on his interpretation of the school as an organization and the leader's role in it. There exist at

least three rather different models about this organizational network which may be emphasized differently by most educators. It is probably unfortunate if only one model is applied rigidly to the schools. The purpose of the introduction of the organization theories is to give a brief outline of the terminology and concepts used in leadership characterizations, not a detailed analysis of modern theories of how to lead a productive establishment.

Classical organization theory

The earliest comprehensive theories date back to the Industrial Revolution in the beginning of our century. The classical thinkers in the field, such as M. Weber, H. Fayol, and F. Taylor, tried to give the theory of effective organization a scientific bases. Though the classical organization theory has at least three schools of thought, namely Weber's Ideal Type Bureaucratic Theory, Taylor's Scientific Management Theory, and Gulick's POSDCoRB (Planning, Organizing, Staffing, Directing, Coordinating, Reporting, and Budgeting) application of Scientific Management Theory, they have a basic philosophy in common:

- hierarchial structure of the organization authority,
- division of labor so that experts of different kinds can be used,
- controlling the processes on each level and

sector,

- goal definitions and task prescriptions, and
- extrinsic rewards.

The classical organization theory is still effective in educational systems in Finland as well as in many other countries. The hierarchy of school administration has been mentioned above. Within each council of educational administration the organization is planned in the same bureaucratic way according to the same scientific management principles. Within the walls of a school similar features can be found: there exists a principal and possibly vice-principals as leaders of the school, teachers of different stages and subjects, students in different grades etc. Measuring the results of working and the levels of performance is typical of schools too, the order of work is rather strictly defined (e.g. each subject has certain goals and knowledge content in each school grade), size of each class is regulated, the administrational chain-of-command is quite general, detailed rules and norms how to behave in school are necessary for students and less apparently also for teachers, and the search for the "best" way of teaching and all other activities is typical of everyday school-life. However, this description does not include at all the whole truth of the organization of a school.

Social system theory

The classical organization theory dealt with an individual worker as a part of the bureaucratic machine. For instance the interrelationships were neglected and this contributed to the development of another organization theory. The starting point for the new theory came from the well-known experiments studied by E. Mayo at the Hawthorne Works in the 1920s and 1930s. The most crucial finding was the discovery of the impact of social-psychological variables within the worker group. The workers did not act or react just as individuals but as members of informal groups. The theory based on this point of view is usually called social system theory or social-political group theory (Mayo 1933).

The social system theory emphasizes human relations, informal groups, peer pressures, intrinsic rewards, and psychological needs. Nowadays we often associate these aspects with democratic principles of management and employee participation: the cooperation between management and workers could make working environment satisfactory and resolve possible disagreement in a spirit of goodwill.

Of course school is composed of different social systems some of which are formal (math classes etc.) and others informal (teachers' recess groups, students' cliques etc.). Throughout the educational systems similar groupings can be found. Figure 2.1.1

illustrates in a quite general level the educational subsystems of school and school administration (Hanson 1979, 72).

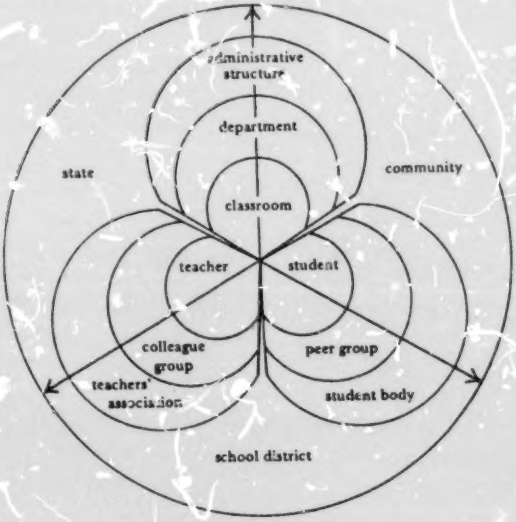

Figure 2.1.1. Educational subsystems (Hanson 1979)

Informal group is usually organized around a dominant element, such as a cheer leader, social activist or an old guard etc. Compared with the classical organization theory the social system theory emphasizes, not the hierarchial power roles but coalitions of social groups frequently working outside the formal system, with not only formal but also informal goals frequently conflicting with each other, with not chain-of-control but informal norms of groups, with not just extrinsic economic rewards but with motivational needs that extend far beyond economics. The social system theory does not regard

conflicts harmful but inevitable and frequently very constructive.

It is quite clear that the principal who looks on his job through the eyeglasses of the social system theory behaves in quite another way than the one who sticks to the scientific management theory. In the school system of today's Finland educational planning and decision-making and perhaps the activities in school rather resemble Lindholm's Science of Muddling Through (Lindholm 1959) than the principles of effective management:

- rather than attempting at a comprehensive survey and evaluation of all possible alternatives the focus lies only on those policies that incrementally differ from existing ones,
- only few policy alternatives are considered,
- for each policy alternative, only few consequences are evaluated.
- incrementalism allows for countless end-means and means-ends adjustments which, in effect, make the confronting problem more manageable,
- thus, there exists no one or right solution but a never-ending series of attacks on the problem through a succession of analyses and evaluations, and
- as such, incremental decision-making is described as limited in scope and impact, geared more to the alleviation of present, to concrete social imperfections than to the promotion of future social

goals.

The policy selected is such that nearly all decision-makers can agree on. Thus, very seldom the school boards or similar decision-making organizations allow things to go up to voting; they rather postpone decisions. Only those problems are solved which the decision-makers can agree on.

Open system theory

While both theories mentioned above regard the organization as a more or less closed system without noteworthy interaction with the surrounding environment the open system theory is just the opposite. According to the basic assumptions of this theory the organization almost constantly interacts with its environment and behaves like a living being. It receives and actively takes human and material resources, values, expectations, beliefs, and models; transforms them by means of its capabilities for its own puposes, and exports the products equipped with its trademark into the environment. It gets feedback, and possible increased financial support for its efforts and bloom.

The open system theory which was developed during the 1960s gives emphasis on the input-output mechanism, cycles of events, and the organization exchanging information with the environment all the time. To manage the organization and the processes

within it is very complex because the leader is involved in a continuously changing environment with new impulses, laws, administrative provisions, political conjunctures, employee market etc. The subsystems of the organization are also changing according to the new demands of workers' unions and different associations. Interdependence is the rule in the relationship among the components which enter into a system (Parsons et al. 1962, 107).

According to the open system theory, organization is characterized by interlocking cycles of events within and between subsystems, power diffused into subsystems, and the demands and needs of the environment giving direction to events and dynamic relationships. Communication follows information networks between subsystems (which are linked with the environment), control is established by the effectiveness of the linkages between the internal subsystems and the external environment. The managerial subsystem must function in support of the needs of other subsystems. Conflicts are inevitable and can lead to positive change through creative management. Many ways of performing can bring satisfactory results. The principal often confronts with events that are not his making and which are beyond his control. The equilibrium in environmental-organizational exchanges gives order to an organization. (Hanson 1979, 181-192.)

School can be regarded as an open system organization. Of course, there are differences between the positions of schools. The compulsory school has no competitor (in Finland) whereas the general secondary school competes for students with vocational schools and institutes. Inputs are human (students, teachers, administrators etc.), material (buildings, books, equipments etc.), and contraints (expectations, demands of laws and policy, values, norms etc.). Outputs are student achievements, attitudial changes, vocational preparation, critical thinking etc. Whatever the outputs are they have in common the fact that their quality is difficult to measure. The transformation processes within school consist of teaching-learning process with all aids of instructional technology, staff meetings and other activities, formal and informal, subgroup activities, decision-making procedures, extrinsic and intrinsic rewards, evaluative strategies etc.

Compulsory school is a local monopoly without competitive systems and it receives its inputs almost regardless of the quality of its output. There is a tendency to adopt the orientation of a relatively closed system and consequently to keep outside the "disturbing" effects of "fighting" society. However, the new demands of society may cause pressures for change. Also the comparisons of the outputs between different countries as well as the comparisons between present and previous outcome work in the

same direction.

How should the principal hold such a complicated educational network in balance? Many researches have been made about the leadership styles of the principals but the findings are inconclusive. Educational scientists tend to answer that no single style is effective in all conditions. The style should vary from democratic to autocratic and laissez-faire depending on the nature of the task, power position, and relations of the staff. Hence, the repertoire of the principal behavior should be large and flexibly used.

In order to understand the role of principal one has to realize the fundamental aspect that administratively the whole educational system is supposed to be a classical bureaucratic organization but the subsystem of school is, in fact, more or less open social organization, though some formal bureaucratic features can be found in school. At the level of school all official documents, instructions, and provisions, which have come through the administral line, have to be interpreted according to the prevailing circumstances with its social realities. On the other hand those innovations, which have their origins at school and have the staff's support and involvement, have to be modified according to the official bureaucratic rules. No matter which line the impulses have come from, the principal has the

main responsibility for getting support for the new ideas and seeing that the means of implementation are legal.

2.2 Behavior of Principal

Classical organization and social system theories give the open system theory many central concepts. The open system theory combines them within a new framework in which the conceptual perspective is quite different. In school practice, leadership expectations vary to a great extent among the principals themselves, the staff, the parents, and the municipal authorities. The principal interacts with the social environment, interprets the expectations and feedback, and behaves accordingly. We can only conceptually separate the personal and institutional roles as Getzels and Guba (1957, 429) have made (Figure 2.2.1).

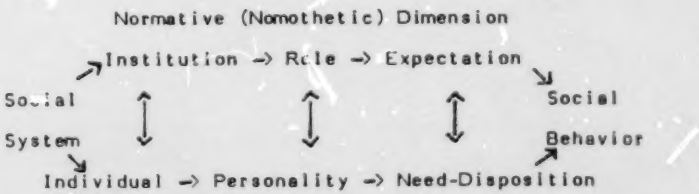

Figure 2.2.1. Normative and Personal Dimensions of Social Behavior (Getzels & Guba)

It is probable that no principal can inflexibly

stick to one single leadership theory and neglect all others. Of course, the principal has his interpretations about leadership, its demands and expectations, and he may have a tendency to favour some model but in practice he has to combine various orientations. How he actually behaves is dependent on his personality and the prevailing conditions. The cognitive styles which are deeply embedded in his personality may greatly influence the way he behaves.

The profile of actual working of the principalship may vary in different countries. In the United States it consists of office responsibilities (32 %), faculty or community relations (25 %), with students (21 %), curriculum matters (14 %), and professional development (7 %) (Howell 1981). The total view in Finland may be similar though the preparing of study program is the most time consuming duty.

So far we have discussed the role of the school principal from the viewpoint of normative dimension. In the following chapter personal dimension has to be dealt with.

3. INDIVIDUAL PERSONALITY

All principals are teachers; our present concern is the qualities of the teachers who have applied or who have given their consent for the candidacy to be principals. As to the functions and duties of principalship we assume that they greatly differ from those of an ordinary teacher. Thus we are, in particular, interested in such personality regularities which probably have a functional orientation, especially to organizational issues.

We regard, as Royce and Powell (1983) have suggested, individuality and personality as a supra-system which consists of two interdependent major systems: style system and value system. Lower in this hierarchial description of personality are four other systems, namely cognitive, affective, motor, and sensory ones. (Figure 3.1.)

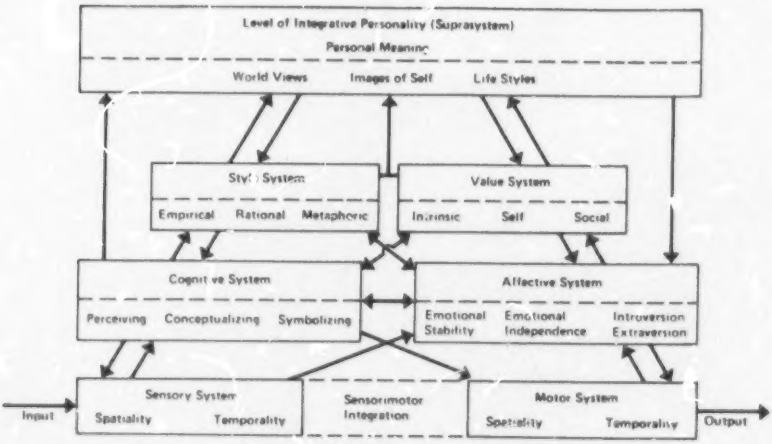

Figure 3.1. The basic systems and interactive relationships of integrative personality (Royce & Powell).

The higher-level systems

- are more important with respect to the processes involved in personality integration,
- can input coordinating information,
- are concerned with longer units of times,
- have a higher priority of action, and
- are more closely related to the deeper levels or aspects of personality (Ibid. p. 12).

On the lowest level there are sensory and motor systems plus their so called sensori-motor integration. All systems are regarded to be goal-seeking with norms for evaluating the quality of actions.

The information-processing model of cognitive psychology (see e.g. Leino 1981) is not contradictory

to the personality system model described above. We can consider the cognitive system in action and thus separate perceiving, conceptualizing, and symbolizing processes which are planned and controlled by goal-seeking strategies as inputs of personality. Considering the cognitive abilities, such as verbal, spatial, reasoning etc., as dynamic - as has been done by the present author (Leino 1977, 1978) - gives the cognitive system a hierarchial structure which can be described in the frame of the information-processing model. In addition to this the processes can be divided into the affective and cognitive systems. It might be necessary to give affective processes a greater emphasis than cognitive psychologists have done so far.

The present investigation is focused on the style and value level of personality but in order to get information for that purpose the lower levels are necessary.

3.1 Styles and Values

According to the systems model of personality presented by Royce and Powell styles and values give the individual the direction and attention which are required in all his actions. The critical difference is that styles provide directional aspects for which particular modes of cognitive and affective processes are selected, whereas values are responsible

for selection of information content (Royce & Powell 1983, 133-134). Both the high-level systems are assumed to have similar formal linkages to cognition and affect. Cognitive values reflect interests, affective values and needs, whereas cognitive, affective, and integrative cognitive-affective styles reflect the consistent ways an individual behaves in a certain situation.

Values and styles are closely intervolved in ordinary happenings of life when the individual has to make decisions what to value and how to do things. It is worth mentioning that the systems terminology emphasizes the goal-seeking processes, e.g. valuing and stylistic approaching. (See Heikkinen 1982.) In the present investigation we concentrate on styles but the data obtained involves values too.

We prefer to define styles as information processing regularities (Messick 1982, 4). Because the cognitive aspect is prominent in our investigation we prefer to use term cognitive style though some items in the measuring instrument are also loaded by affective aspects as well. So far, it is very difficult to empirically separate the affective system from the cognitive one.

There are theories of the structure of styles. Royce and Powell (1983, 134-145) distinguish cognitive, affective, and integrative cognitive-affective styles. Cognitive styles are linked with abilities

and divided into three types: (1) rational styles which involve a commitment to relating to the world through one's rational/analytic skills and to testing one's ideas about reality in terms of logical consistency, (2) empirical styles which involve a commitment to relate to the world through one's senses and to test one's ideas about reality in terms of reliability and validity of observations, and (3) metaphoric styles which involve a commitment to symbolic-metaphoric experience and to test one's ideas or awareness about reality in terms of their universality. The first type includes such styles as cognitive complexity, category width, conceptual differentiation, and analytic vs. relational categorizing. The second type includes styles like sharpening vs. leveling, and abstract vs. concrete orientation. The third type includes styles of conceptual integration and compartmentalization. (About style dimensions see e.g. A.-L. Leino 1980.) Affective styles are grouped respectively consisting of constricted vs. flexible style, tolerance for unconventional, reflection vs. impulsivity, and physiognomic vs. literal style. The cognitive-affective styles are combinations of cognitive and affective styles acting simultaneously.

Another suggestion for giving styles a structure has been made by Messick (1982, 6-7). He gives attention to the phases of an input-output sequence of information processing. Thus he distinguishes the styles

with (1) information search, (2) encoding, (3) memory storage and retrieval, (4) problem representation and restructuring, (5) hypothesis generation, and (6) strategy selection and decision making. The style dimensions in each group are respectively: (1) scanning vs. focusing, (2) category width, (3) leveling vs. sharpening, (4) field independency, (5) converging vs. diversing, and (6) reflection vs. impulsivity. However, Messick states that the suggestion is far from perfect because some styles appear to influence at several phases of the sequence. He makes still another suggestion to relate different style dimensions on the basis of the generality level and pervasiveness. This suggestion seems to fit better to the hierarchial nature of personality systems but a new problem appears in separating styles from abilities. In fact, Messick suggests concepts of stylistic abilities and cognitive control between the styles and abilities. Cognitive styles are conceived as higher order variables that organize cognitive controls, strategies, and abilities into functional patterns characteristic of the individual. (See also Leino 1981, 35-36.)

As a conclusion about the structure of styles two categorizing properties can be considered as a basis: generality level as a vertical dimension and domain of personality (cognitive, affective) as a horizontal one. It is worth mentioning that in terms of the personality systems and subsystems we prefer

to distinguish styles and strategies, the former being more global, pervasive, and deeply anchored in the total personality, and the latter more restricted, dependent on the situation, and amenable to change through systematic training. If the conceptual content of strategies is too large then it may be preferable to vertically distinguish an additional category, that of tactics. The "hows" of different levels of behavior would then form a hierarchy: styles, strategies, and tactics.

3.2 Styles and Vocational Preferences

It is probable that the students' cognitive styles effect their choice of major vocational field as well as their choice of specialization within a certain field. The relation between styles and vocations, however, is not so simple. Most people select their occupations particularly for economic reasons though other preferences, beliefs, and expectations effect simultaneously. Hence the stylistic dispositions are not very dominant between different vocations in our present society. It seems probable that in the situations where the economic and other equivalent extrinsic reasons are absent cognitive styles and vocational preferences are closely related.

There are research results which concern the question. Witkin et al. (1977) found out that the surgic-

al nurses were relatively field independent whereas the psychiatric ones were field dependent. Science and mathematics teachers have been found to be more analytic than elementary school teachers (Messick 1976). In the study of A.-L. Leino and Puurula (1983) it was found out that prospective teachers of handicraft were relatively field independent and teachers of home-economics field dependent. In the same study the conceptual level of prospective class teachers (elementary school teachers) was found to be quite high while that of handicraft teachers was rather low.

Within a certain vocational group of people there are many differences in working habits and preferences which are related to cognitive styles. Hunt and Joyce (1981) carried out two studies of the relationship between the reflective style of teaching and conceptual level. The subjects were teacher-trainees. The reflective teaching style encourages pupils to ask questions. The researchers found out that the higher the trainee's conceptual level was the greater was the occurance of the reflective pattern. In a research project led by Messick (1976) it was discovered that relatively field-dependent teachers prefer discussion to lecturing and discovery, and they have more favorable attitudes towards democratic teaching procedures than field-independent teachers.

Teachers and students who are similar in cognitive style tend to view each other with greater mutual esteem than those who are dissimilar; they also tend to communicate more effectively (Witkin et al. 1977). On the other hand, the repertoire of teaching procedures can be expanded through training and thus make the teacher more flexible while teaching students of differing cognitive styles (e.g. Tinsman 1981).

When considering the styles of the principals we feel tempted to identify them with leadership styles. A leadership style can be defined as a particular behavior emphasized by the leader to motivate his group to accomplish some end (Hanson 1979, 239). This definition can be regarded to concern people, processes, and systems. There is a long research tradition of leadership styles beginning from attempts to identify characteristics unique to leaders to leader's behavior in socio-political group setting and more complex descriptions using several dimensions (e.g. personality attributes, situational factors such as leader-member relations, task structure, power position etc.). (See e.g. Hanson 1979, 225-278.) Usually leadership styles are considered rather specific and clearly manifest concepts compared with cognitive styles in personality systems, which does not mean that they could not overlap. The terminology and viewpoints are, however, quite different.

In the present study we use the terminology of cognitive styles and also more specific leadership styles. The latter are not bound to any single theory or research carried in the field, but as such they appear in the responses of the principals. We shall notice that style dimensions such as democratic vs. autocratic and task-motivated vs. relationship-motivated, which have been described in the literature (While & Lippitt 1960, Fiedler 1973), are quite close to the styles of the present study.

4. PROBLEM AREAS

The aim of the present study is to investigate the personality of principals in terms of their cognitive styles and professional duties. The principalship is important for leading and developing school but not very rewarding in terms of economics or working conditions. An ordinary teacher can easily get better salary and longer holidays than the principal. On the other hand, the work is varying, organizationally demanding, challenging, in a way independent, and satisfactory - if everything goes well. It means less direct fighting with the learning problems of the students and more organizational management, it means less involvement with everyday problems and more involvement with future problems, less work with young people and more with adults, less work within the school and more in the open system of surrounding society. This description of the principal's work makes it apparent that the requirements are much different from those of ordinary teacher's.

If we want to describe the requirements of principalship in terms of cognitive styles we tend to hypothesize that the principal has to be cognitively complex and field independent. Of course there are differences in the requirements depending on the size of the school, the homogenity of the teachers, the industries of surrounding community etc. In a

small school with only few teachers and some tens of students the leader's role is not very demanding and the principal is then more of a teacher than a manager. Because of the pilot nature of the present study these aspects are omitted.

The cognitive styles of the principals are measured with three instruments: (1) Conceptual Level by means of Paragraph Completion Method developed by Hunt et al. (1978), (2) Conceptual Complexity by means of Kelly's Repertory Grid Method (Kelly 1955) which has been improved by Bieri et al. (1966) and modified into a group test version by our project, and (3) Field Dependency by means of Witkin's Group Embedded Figures Test (Witkin et al. 1971). The first two tests supposedly overlap because both describe the tendency of the subject to construe the world, especially that of social behavior, in a multidimensional and discriminating way. The differences of the tests are analyzed later on. The third test (GEFT) has frequently been used during the last ten years and the corresponding style dimension has thoroughly been investigated. The field independent person is analytic. He can keep details separate from the surrounding field and is competent in analytic functioning in complex impersonal situations. This property is very useful for the principal when the complicated study program of the school has to be prepared.

Cognitive Complexity is needed in the social field of different levels within school and larger educational systems. It may also be helpful in organizing different innovative developments. Conceptual Level was measured by D. Hunt's Paragraph Completion Method (PCM). The test is semiprojective and consists of the following topics:

1) What I think about rules...
2) When I am criticized...
3) When someone does not agree with me...
4) When I am not sure...
5) When I am told what to do...

The topics are selected in order to obtain a sample of how the subject handles conflict or uncertainty (criticism, disagreement, uncertainty) and what he thinks about rule structures and authority relations (rules, commands). The subject is asked to write at least three sentences on each topic. Two minutes are allowed for each topic. The main point in scoring the responses is to evaluate how the subject thinks. The score 0 is given if the subject reacts only in a negative, unsocialized or aggressive way, blames others, or avoids the situation defensively. The score 1 is given if the response reflects behavior that is socially acceptable or it shows only dichotomous thinking (right-wrong etc.). The score 2 is given if the subject is open to other people's ideas and evaluates alternatives without internalizing them. The score 3 is given if different alternatives

are carefully considered and the solution is based on the best alternative. The scoring procedure as well as the typical responses make it apparent that PCM involves emotional aspects. The topics of rules and uncertainty are usually dealt with neutrality and cognitive thinking though even those can awake emotions.

In the Repertory Grid Test the subjects are asked first to name the eight important persons (self, mother, father, brother (or substitute brother), sister, spouse, two best friends of different sex), consider three of them in a given order, and tell in which way two of the three are similar to and different from the third. The number of the different constructs (properties) used is the index of cognitive complexity. The responses reveal what kind of and how many concepts the subject uses and to what kind of features he pays attention. Features can be very sophisticated, emotional, social or they can refer to the appearance of the persons etc. It will be interesting to see if the PCM correlates with the RGT.

The second problem area of the present study is to find out the relations between the principal's cognitive styles and the teaching methods he favors. We are especially interested in the degree of structure of the favored teaching methods. The main presumption was that if the principal prefers highly

structured methods he also prefers a school climate with a similar structure. If the degree of structure of teaching methods is low then the principal also favors school activities with a low degree of structure. Highly structured teaching is teacher-centered. It has also been shown that field-dependent teachers prefer discussion to lecturing and discovery, and they have more favorable attitudes towards democratic teaching procedures than field-independent teachers. The subjects were asked to rank three most favored methods of the following:

0. planning cooperatively the activities proposed by students (such as making excursion, planning class party etc.)
1. leading group activities
2. helping individual studying
3. leading discussion in the class
4. teacher-centered instruction
5. lecturing or speaking in the morning ceremony.

It was supposed that the methods in this order form a dimension of the degree of structure of teaching. Each subject was given the weighted mean of his choices (weights 3, 2, 1) which indicates his position in the dimension of structure.

The subject matters have some structural differences which may be reflected in the preferences of teaching methods. Therefore the subject matter was controlled. In the case of teachers who have taught several subjects the most favored subject was asked.

The subject matter is also an important variable from the viewpoint of teachers' values (e.g. Andrews 1957). It is generally believed and experienced that the personal traits of teachers of different subject matter fields are different. Hence the subject matter and cognitive styles may be related. However, the subjects in the present study are principals and thus a selective sample from the populations of teachers of different subject matters. The third problem area concerns subject matters represented by the principals and the relationship between subject matters, cognitive styles and teaching methods. Great differences are not expected on the basis of subject matter because it is hypothesized (according to the author's experience) that the selective process into the position of a principal picks up only teachers with certain personality features.

The fourth problem area concerns leadership conceptions of principals. No special instrument is prepared for this purpose in the present study but some tentative information can be achieved by means of the principals' responses in the PCM. No hypothesis is suggested.

5. RESULTS

The subjects, invited to participate in an in-service training course of the principals of junior and senior secondary schools 28.-29.4.1983, are all from one county (Vaasa). The population of the principals of the county can be regarded to represent the whole country. The number of the subjects (principals) was 87. Because of some emergency absences (phone calls etc.) during the test the number of those of whom the complete data were obtained was 84. The distributions of cognitive styles, teaching methods preferences, correlations, and interaction scrutinies are made using the complete data (N = 84). In other analyses we use the data obtained from all the 87 subjects.

5.1 Principals' Subject Matter

The principals' main subjects taught or favored are presented in Table 5.1.1.

Table 5.1.1. Principals' main subjects

Subject	Frequency	Percentage
mathematics and physics	32	37
history and social sciences	20	23
biology	11	13
physical education	8	9
foreign language	7	8
mother tongue	4	5
religion	2	2
arts and textile handicraft	2	2
psychology	1	1
	87	100

Most of the principals are according to the table mathematicians (37 %). This may be regarded as an evidence of the fact that one of the main duties of principals is making the schedules of studies which is either computerised or combinatoric manual work. The second biggest group is history teachers (23 %). We may interpret this as an indication of skills connected with surrounding society and knowledge of traditions required of the principals. The following groups represent biology, physical education, and foreign language. Other school subjects are limited in number. The small representation of religion, psychology, and mother tongue is a little surprising. We may assume that the duties of the school leader are nowadays mostly organizational, with no great involvement in interpersonal relations at school level.

5.2 Principals' Cognitive Styles

All the measuring instruments of the cognitive styles in the study have also been used in Finland and the reliability indices have been consistent with the American test results (Leino 1980, 26; Leino & Puurula 1983, 21; Aimo & Viilo 1983). The reliabilities of the CEFT, PCM, and RGT have been about .80. In the PCM the total score is the mean of the three highest responses as suggested by Hunt. Because persons in leading positions may be expected to answer the topics such as 'When I am criticized...' and 'When I am told what to do...' quite differently from the topics such as 'What I think about rules...' and 'When someone does not agree with me...', Cronbach alpha was calculated over the items 1 - 4 and 1 - 5. It was found out that α_4 was .42 but α_5 only .19. Thus the first four topics of the PCM form a more consistent instrument than all the five items. The fifth topic (When I am told what to do...) is thus quite different from the others. It is the author's impression that there was a slight touch of aggressiveness in the answers to the last item. Principals may be rather sensitive in taking orders.

The distribution of the different style dimensions of the study are presented in Table 5.2.1.

Table 5.2.1. Distributions of Principals' Cognitive Styles (N = 84)

Field Dependency (GEFT)

X	0 - 3	4 - 6	7 - 9	10 - 12	13 - 15	16 - 18
f	0	2	7	7	19	49
%	0	2.4	8.3	8.3	22.6	58.4

$\bar{x}$ = 14.8 s = 3.4

Cognitive Complexity (RGT)

X	0 - 2	3 - 5	6 - 8	9 - 11	12 - 14	15 - 16
f	0	2	10	11	26	35
%	0	2.4	11.9	13.1	31.0	41.6

$\bar{x}$ = 2.3 s = 0.4

Conceptual Level (PCM)

X	0-0.9	1.0-1.4	1.5-1.9	2.0-2.4	2.5-3.0
f	0	2	12	43	27
%	0	2.4	14.3	51.2	32.1

$\bar{x}$ = 2.3 s = 0.4

The distributions are all negatively skewed which may create problems in the intercorrelations. The results indicate that the principals as a group

1) are field independent,

2) are cognitively complex, and

3) have high conceptual level.

Compared with the results of prospective teachers (Leino & Puurula 1983, 26-27, 50) the principals are more field independent ($\bar{x}$ princ. = 14.8, $\bar{x}$ prosp. teach. = 14.4) and clearly on a higher conceptual level ($\bar{x}$ princ. = 2.28, $\bar{x}$ prosp. teach. = 1.74). All

means of the cognitive style dimensions are quite far from the means reported by Letteri and Kunz (1980).

The intercorrelations of the styles are presented in Table 5.2.2.

Table 5.2.2. Intercorrelations of Cognitive Styles (N = 84)

GEFT			
RGT	.18		
PCM	.19	.06	
	GEFT	RGT	PCM

The correlation between field dependency (GEFT) and conceptual level (PCM) was .19 which is quite the same than A.-L. Leino got in her study (1980, 27). The correlation between GEFT and cognitive complexity (RGT) was .18, thus of the same size than the correlation mentioned. The main surprise was the very low correlation .06 between the PCM and the RGT. Conceptually the both two dimensions are supposed to overlap. Of course, the distributions are skewed and the sample non-representative of people in general but this does not explain the whole matter. Between the two measuring instruments there are several differences:

- in Kelly's RGT the social context includes only closest relatives and friends while that in the PCM is much more general,

- the RGT asks the subject to seek similarities and differences in other persons while the PCM asks the subject to tell about personal reactions or attitudes, and
- the RGT may tempt some subjects to respond parsimoniously which gives a low score.

The complexity of a person's conceptual level may come out in a wide variety of ways making measuring it very problematic. The low correlation cannot, however, be regarded as an index of validity because one or the other of the instruments is not necessarily the criterium of the other. The validity of the two instruments rests on their theoretical foundations.

5.3 Cognitive Styles and Subject Matter

When we examine the relations between the styles and principals' subject matters we have to keep in mind that the study concerns principals, not ordinary teachers. Table 5.3.1 presents the means of styles of the principals in terms of the subjects they teach.

Table 5.3.1. Means of Styles and Subjects of Principals

Subject	GEFT	RGT	POM	Frequency
mathematics and physics	15.3	12.8	2.3	32
history and social sciences	13.7	12.1	2.2	18
biology	16.0	12.7	2.2	11
physical education	14.7	14.0	2.5	8
foreign language	12.7	12.7	2.1	6
mother tongue	15.5	13.7	2.3	4
religion and psychology	13.0	13.0	2.1	3
arts and textile handicraft	17.0	14.5	2.7	2

Because of the small number of the subjects in different subject matters only some features are discussed. The principals who teach biology and mathematics are more field independent and those who teach history and language are not so field independent. This is what was expected according to the other investigations. The differences in the RGT and the POM are rather small especially between larger groups. We are inclined to believe that these results concern only principals, not necessarily ordinary teachers.

5.4 Preferences of Teaching Methods

The principals were asked to select three most favored teaching methods of the given alternatives. We have the methods on the scale below beginning from those with the lowest degree of structure to the highest:

0	1	2	3	4	5
cooperative planning proposed by students	leading group activities	helping individual studying	leading class discussion	teacher-centered instruction	lecturing

Table 5.4.1 presents the preferences of teaching methods.

Table 5.4.1. Principals' Preferences of Teaching Methods

Degree of structure	0	1	2	3	4	5
1. choice (%)	3	7	24	35	31	0
2. choice	7	14	18	29	27	5
3. choice	15	24	22	17	15	7
Total (%)	8	15	21	27	25	4

The most favored teaching methods were class discussion, teacher centered instruction, and helping individual studying. The least favored methods were lecturing and cooperative planning. If we assume

that the degree of structure of teaching methods is a dimension on which the preferences of teachers are normally distributed then the order of teaching methods used in the present study is consistent with the assumption. The distribution obtained is, however, slightly skewed.

Each subject was scored using the weighted mean of his preferences (first choice = weight 3, second = 2, third = 1) on the scale. The higher the score is the higher is the degree of structure.

Table 5.4.2 gives the structure preferences in different subject matters.

Table 5.4.2. Structure Preferences of Teaching Methods in Different Subject Matters

Subject Matter	Degree of structure
mathematics and physics	2.71
history and social sciences	2.83
biology	2.58
physical education	2.56
foreign language	2.41
mother tongue	2.34
religion and psychology	2.66
arts and textile handicraft	1.67

The differences are rather small but the results are quite clear and consistent with the experiences of the author. However, the degree of structure of teaching methods did not correlate significantly

with any of the cognitive styles. Again we want to remind the reader that the subjects were principals and hence represent a selected sample of teachers.

Because the differences in cognitive styles and degree of structure (of teaching methods) were small, no clear typology of principals could be found.

5.5 Principals' Leadership Conceptions

The semiprojective test of Conceptual Level (PCL) gave an opportunity to find out some tentative results about principals' conceptions of leadership. The idea is to try to understand the responses from the viewpoint of leadership theories. A qualitative analysis was carried out.

What I think about rules...

It was possible to group the responses into three main categories:

1) rules as norms to be followed
2) rules as means to achieve some purpose
3) rules as restrictions on activities.

Category 2 was most frequent, 52 percent of all opinions, category 2, 31 percent and category 1, only 17 percent. Each category could be divided into several subcategories. Table 5.5.1 consists of these subcategories and the relative frequency among the respondents. The total number of different opinions was 207.

Table 5.5.1. What Principals Think about Rules

1. Rules as norms to be followed (17 % of all opinions)

offence, needs punishing	have to be watched	could be followed	have to be sensible, fair	are difficult to formulate
7 %	7 %	13 %	7 %	8 %

2. Rules as means to achieve some purpose (52 %)

instructive	guarantee for safety	leader's weapon	necessary in general	necessary for function	base of society
1 %	19 %	2 %	42 %	51 %	9 %

3. Rules as restrictions on activities (31 %)

chain	limited in number	unnecessary	restrictive in general	restrict functioning	present relationships
7 %	19 %	2 %	5 %	37 %	5 %

We can draw the conclusion that principals in general regard rules as means for functioning and individual safety, and many of them have noticed the restrictive effect of rules. A minority of principals carry out rules to the letter. There is very little evidence that principals regard school organization strictly according to the classical organization theory.

When I am criticized...

Principals' reactions and attitudes towards criticism could be divided into three categories:

1) explanations of immediate reactions (54 % of all opinions)

2) criticism as communication (22 %)

3) criticism as valuable or necessary feedback (24 %).

Table 5.5.2 presents the subcategories of each main reaction. The total number of opinions was 236.

Table 5.5.2. How Do Principals React towards Criticism

1. Explanation of immediate reaction (54 % of all opinions)

neutral reaction, listening, silence	feeling hurt, annoyance	hiding the annoyance	defence, counter-attack	wondering, forgetting
19 %	65 %	6 %	33 %	25 %

2. Criticism as communication (22 %)

correcting the criticism	discussion, debating receiving information	thinking about the criticism
5 %	5 %	50 %

3. Criticism as valuable or necessary feedback (24 %)

belongs to the position	necessary	helping the management	correcting one's own mistakes
8 %	17 %	5 %	37 %

Most of the principals seem to be quite sensitive to criticism taking it as blame and reacting accordingly. Many of them are ready to react defensively or to counterattack though later on they may think about it and the reasons for it; they may even correct their own faults. Only a few principals regard criticism as necessary feedback and as such valuable. This may indicate that conflicts are not generally regarded inevitable which can lead to possible change.

When someone does not agree with...

The responses could be categorized as follows:

1) sticking to one's own opinion (25 % of all opinions)
2) trying to compromise (29 %)
3) accepting or valuing disagreement (46 %).

The total number of opinions was 222. Each main category consists of several subcategories (Table 5.5.3). The percentage shows the relative frequency among the respondents.

Table 5.5.3. Principals' Attitudes to Disagreement

1. Sticking to one's own opinion (25 % of all opinions)

Annoyance	Avoiding, forgetting	Stubborn, no changing opinion, sharpening	Persuasion
14 %	7 %	26 %	19 %

2. Trying to compromise (29 %)

Acquiring additional evidence	Reasoning	Readiness to change one's mind	Discussion, listening	Negotiating, compromising
3 %	17 %	7 %	24 %	23 %

3. Accepting or valuing disagreement (46 %)

Everyone can keep one's mind	Attempts to understand	Great!	Arguments have to be motivated	Examining thoroughly	Selecting the best alternative
26 %	16 %	13 %	27 %	22 %	13 %

While criticism introduced immediate counteraction, disagreement was mostly accepted. Only a fourth of the principals wanted to keep their opinions unchanged while three fourths were willing to discuss, compromise, or select the best alternative in question. It seems that a great majority of principals is willing to negotiate and thus behave like the leader of a social organization.

When I am not sure...

Towards uncertainty the principals' reactions (N = 216) were as follows:

1) saving one's face (16 % of all opinions)

2) social decision-making or negotiating (42 %)

3) independent inquiry or making one's own decision (42 %).

Table 5.5.4 presents different subcategories and their relative frequencies among the subjects.

Table 5.5.4. Principals' Behavior towards Uncertainty

1. Saving one's face (16 % of all opinions)

Annoyance	Keeping silent	Avoiding, passing	Appearing to be sure	Making the decision in spite of all
5 %	10 %	9 %	8 %	9 %

2. Social decision making or negotiating (42 %)

Revealing ignorance	Apologizing, embarrass-ment	Putting off	Discuss-ion with friends	Asking some expert
13 %	10 %	33 %	29 %	20 %

3. Independent inquiry or making one's decision (42 %)

Trying to find certainty	Searching documents or other sources	Thinking carefully about	Decision-making after taking one's stand
6 %	52 %	29 %	17 %

Either independent inquiry or negotiation were the most frequent means to solve a problematic situation. Attempts to save the infallible leader's face can be interpreted to reflect the role of a bureaucratic leader but only 16 percent of all opinions were in this category.

When I am told what to do...

Principals' reactions to being told what to do can be categorized into three groups:

1) showing who the leader is (61 % of all opinions)
2) taking orders only from superiors (14 %)
3) depends on the answer to the question (25 %).

The whole number of expressed opinions was 206. They could be divided into the subclasses in Table 5.5.5.

Table 5.5.5. Principals' Attitudes and Reactions towards Commands

1. Showing who the leader is (61 % of all opinions)

Depression	Anger	Distaste	Not giving in	Avoiding	Persisting	Showing superiority
2 %	43 %	12 %	31 %	17 %	12 %	28 %

2. Taking orders only from superiors (14 %)

Demanding justification	Only superiors are allowed to...	No illegal actions	Everyone is responsible for one's doings
5 %	16 %	7 %	7 %

3. Depending on the matter in question (25 %)

Sometimes admitting	Thinking of the reasons	Well-motivated are acceptable	Advice is welcome	Finding the best solution
7 %	16 %	23 %	3 %	9 %

Finnish school principals are very sensitive to commands and independent. Mostly the first reaction is anger and tendency to show who the leader is. The real position of the principal is not nowadays as independent as it used to be and this may cause the illusion of independency. As mentioned above the role of the principal is to implement the decisions of Communal School Council though the principal has right to make proposals to the Council. Diplomatic and good proposals give principals power in demo-

cratic decision-making process. The leader's role seems to be ambivalent: the principal makes himself to believe that he is quite independent but he acquires this state of affairs by trying to keep the support of teachers, parents, and authorities.

An attempt was also made to characterize individual principals' conceptions about leadership. The data acquired allowed us to draw only a tentative conclusion. On the basis of each subject's all responses a comprehensive characterization was made. The typology of four classes was formed:

1) authoritative principals,
2) negotiative civil servants,
3) task- and matter-oriented principals, and
4) participating principals.

The most frequent type was that of negotiative civil servant (N = 35), then came the types of authoritative (N = 23) and task-oriented (N = 22) principals and at last the small group of participating principals (N = 6). Different types can be characterized as follows:

1. authoritative principal
- it is I who am the leader
- I never give up my opinion
- rules have to be followed,

2. negotiative civil servants
- rules are needed for flexible action
- if I am criticized I thoroughly inspect the

reasons

- if I am not sure I put things off and ask somebody's advice
- one is supposed to take orders from superiors,

3. task-oriented principals

- rules are needed for work and society
- criticism provides good feedback
- if I am told what to do I try to take care of the things,

4. participating principals

- rules have to be flexible
- criticism makes me think of the reasons of the criticizer
- if I am not sure I say it out and ask for help to find a way out
- when I am told what to do I try to find a compromise.

As the frequencies of the different types show the participating type is uncommon.

Because of the tentativeness of the results no further analyses were carried out.

6. DISCUSSION

Many educational scientists have emphasized the role of the principal in developing and innovating school. Organizational developments can be carried out by laws and administrational orders but quite independently of these changes teaching often remains the same if the principal cannot motivate the teachers to think of the basic philosophy behind the innovations and their consequences for teaching.

Though the principal's key position is well-known there are only few researches concerning the field in Finland. Neither has the training of principals received much attention so far. In the present study an attempt was made to obtain preliminary information about the personality regularities and leadership conceptions of principals. The subjects (N = 87) can be considered to represent the population of Finnish school principals.

Most of the principals were teachers whose subject matter was mathematics, history, biology, or physical education. Other school subjects had a representation of less than 20 percent. It is a fact that most principals are men and that about half of the teachers of the first mentioned subjects are men while most teachers of other subjects are women. This is part of the explanation but not the whole. It seems that in the former group there are more teachers with personality traits suitable for the

school leader's duties than in the group of the latter subjects.

In the study the main concern was such personality traits which could be expected to relate with functioning. Thus the cognitive styles, which regulate and control the person's information processes, were preferred e.g. to general intelligence. According to the results the principal is field independent, cognitively complex, and his conceptual level is high. From the point of view of the principal's duties these personality regularities seem to be very useful. On the other hand, some 20 percent of the principals are field-dependent, cognitively simple, or have a low conceptual level. It is the concern of further studies to investigate how these principals experience educational leadership and within what kind of educational system they work.

It was also found out that the cognitive styles used in the study did not correlate highly with each other, not even the style dimensions of conceptual level and cognitive complexity which were expected to overlap. This may, at least partly, be due to the small standard deviations in the population of principals, which will be further investigated later on.

Principals' conceptions of leadership were investigated by means of qualitative analysis. These techniques are not new though they have lately achieved

a more prominent position in educational sciences than previously. At the innovative stage of research they are useful. However, the validation of the results is problematic. The generalization process, which was carried out while categorizing the responses, is liable to subjectivity. One could attribute a touch of subjectivity even to the interpretation of the results within the theoretical framework. The validation of the results is another task of further investigation.

According to the results, the Finnish principals' conceptions of leadership cannot be explained by any single organization theory. Though most of the principals do not want to be told what to do and they have independent opinions they simultaneously are eager to discuss and negotiate with other persons before decision-making. The small frequency of participative principles may indicate that the school leader's work is organizational and task-oriented rather than such as demands personal involvement. We know that the principal has to be in personal contact with many people outside the school but these contacts demand businesslike management rather than empathy or warm encouragement.

We will later be concerned with questions like the following: what kind of personal qualities are required of a good principal, what are the leading styles that principals prefer, and what kind of

training do they need or prefer? The cognitive styles of ordinary teachers compared with those of principals are also a concern of a further study. Another interesting question is how teachers' styles effect students' styles.

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